



APPLICATION FOR PREAPPROVAL

SPECIAL SEISMIC CERTIFICATION OF EQUIPMENT AND COMPONENTS

For Office Use Only

APPLICATION NO.

OSP – 0109-10

Check whether application is: NEW ☒ RENEWAL ☐

1.0 **Jefferson Electric Corporation** **Dan Allen**
Manufacturer *Manufacturer's Technical Representative*

9650 South Franklin Drive, Franklin WI 53132-8847

Mailing Address

(414) 858-0802

Telephonedallen@jeffersonelectric.com*E-mail Address*

2.0 **Transformer Product Family** **Dry-Type Transformer**
Product Name *Product Type*

Various - See Attachment A

Product model No (List all unique product identification numbers and/or serial numbers)

General Description: Dry-Type transformer family. Including a range of KVA ratings, mounting types, construction materials, enclosure types, and potted or ventilated construction. (See Attachment A for further details)

3.0 **Tobolski Watkins Engineering, Inc.** **Derrick A. Watkins, S.E.**
Applicant Company Name *Contact Person*

3710 Ruffin Road, San Diego, CA 92123

Mailing Address

858-381-5843

Telephonedwatkins@tobolskiwatkins.com*E-mail Address*

I hereby agree to reimburse the Office of Statewide Health Planning and Development for the actual costs incurred by the department for review.

Signature of Applicant

08/16/2010

Date

Vice President
Title

Tobolski Watkins Engineering, Inc.
Company Name

**Registered Design Professional Preparing the Report**

4.0

Tobolski Watkins Engineering Inc.

Company Name

Matthew J. Tobolski, Ph.D, P.E.

Contact Name

C 72806

California License Number

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E-mail Address

California Licensed Structural Engineer Review and Acceptance of the Report

5.0

Tobolski Watkins Engineering Inc.

Company Name

Derrick A. Watkins, S.E.

Contact Name

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California License Number

3710 Ruffin Road, San Diego, CA 92123

Mailing Address

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Telephone

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Anchorage Pre-Approval

6.0

☐

Anchorage is pre-approved under OPA-

(Separate application for anchorage pre-approval is required)

☒

Anchorage is not Pre-approved

Certification Method

7.0

☒

Testing in accordance with:

☒

ICC-ES AC-156

☐

Other (Please Specify):

☐

Analysis

☐

Experience data

☐

Combination of Testing, Analysis, and/or Experience Data (Please Specify):

Testing Laboratory (if applicable)

8.0

Clark Dynamic Test Laboratory, Inc.

Company Name

J.R. Antenucci

Contact Name

1801 Route 51 South, Building 8, Jefferson Hills, PA 15025

Mailing Address

412-387-1001

Telephone

jrantenucci@clarkdynamic.com

E-mail:

**Approval Parameters****9.0**Design in accordance with ASCE 7-05 Chapter 13: ☒ Yes ☐ NoDesign Basis of Equipment or Components (F_p/W_p) = **0.72 S_{DS}** S_{DS} (Spectral response acceleration at short period) = 2.0g or 1.6g as listed in **Attachment A** a_p (In-structure equipment or component amplification factor) = **1.0** R_p (Equipment or component response modification factor) = **2.5** I_p (Importance factor) = **1.5** z/h (Height factor ratio) = **1.0**Equipment or Component fundamental period(s) = **See Attachment A, Table 2**Building period limits (if any) = **None**Overall dimensions and weight (or range thereof) = **See Attachment A, Table 1**Equipment or Components @ grade designed in accordance with ASCE 7-05 Chapter 15: ☐ Yes ☒ NoDesign Basis of Equipment or Components (V/W) = S_{DS} (Spectral response acceleration at short period) = S_1 (Spectral response acceleration at 1 second period) = R (Response modification coefficient) = **1.0** Ω_0 (System overstrength factor) = **1.0** C_d (Deflection amplification factor) = **1.0** I_p (Importance factor) = **1.5**

Height to Center of Gravity above base =

Equipment or Component fundamental period(s) = Sec

Overall dimensions and weight (or range thereof) =

Tank(s) designed in accordance with ASME BPVC, 2007: ☐ Yes ☒ No**10.0 List of attachments supporting the special seismic certification of equipment or components:**

<input checked="" type="checkbox"/> Test Report	<input checked="" type="checkbox"/> Drawings	<input checked="" type="checkbox"/> Manufacturer's Catalog
<input type="checkbox"/> Calculations	<input type="checkbox"/> Others (Please Specify):	

11.0 OSHPD Approval (For Office Use Only)

Signature & Date

Chris Tokas, SHFR

Name & Title

8/23/10**December 31, 2016**

Approval Expiration Date

 S_{DS} (g) = **See Section 9.0** z/h = **1.0**

Special Seismic Certification Valid Up to

Condition of Approval (if any):

ATTACHMENT A - OSP Submittal: Jefferson Transformers

TABLE 1 - Seismically Qualified Product List											
Group	Phase	Encapsulated	Mount	Enclosure	Rating (KVA)	Max. Weight (lbs)	Height (in)	Width (in)	Depth (in)	Testing Required	Qualified Level
1	Single	Encapsulated	Wall	NEMA 3R	1.5	32	12.5	6.7	5.3	Interpolated	Sds=2.0 z/h=1.0
					2	40	12.5	6.7	5.3		
					3	68	14.6	7.6	7.2		
					5	104	14.6	7.6	7.2		
					7.5	126	16.1	10.6	8.6		
					10	185	16.1	10.6	8.6		
					15	245	21.1	13.7	10.1		
2	Single	Encapsulated	Wall	NEMA 3R	25	385	21.1	13.7	10.1	UUT-3, NEMA 3R Copper	Sds=2.0 z/h=1.0
					7.5	107	16.1	10.6	8.6	UUT-2, NEMA 3R Aluminum	
					10	157	16.1	10.6	8.6	Interpolated	
					15	208	21.1	13.7	10.1		
					25	327	21.1	13.7	10.1		
3	Three	Encapsulated	Floor	NEMA 3R	30	1,062	37.0	25.3	12.8	Interpolated	Sds=2.0 z/h=1.0
					45	1,182	37.0	25.3	12.8	UUT-1, NEMA 3R Aluminum	
					75	1,320	37.0	25.3	12.8		
4	Single	Ventilated	Floor	NEMA 1 or NEMA 3R	1	56	18.0	13.0	12.0	UUT-4, NEMA 1 Copper	Sds=2.0 z/h=1.0
					2	67	18.0	13.0	12.0	Interpolated	
					3	85	18.0	13.0	12.0		
					5	104	18.0	13.0	12.0		
					7.5	155	24.0	15.0	14.0		
					10	188	24.0	15.0	14.0		
					15	211	27.0	15.0	15.0		
					25	298	29.0	17.0	17.0		
					37.5	451	31.0	18.0	20.0		
					50	538	32.0	20.0	22.0		
					75	691	34.0	22.0	22.0		
					100	844	36.0	24.0	22.0		
5	Three	Ventilated	Floor	NEMA 1 or NEMA 3R	167	1,148	46.0	30.0	35.0	Interpolated	Sds=1.6 z/h=1.0
					1	59	18.0	13.0	12.0		
					2	78	18.0	13.0	12.0		
					3	101	18.0	13.0	12.0		
					6	144	18.0	13.0	12.0		
					9	199	21.0	17.0	14.0		
					12	243	21.0	17.0	14.0		
					15	250	22.0	19.0	16.0		
					30	350	25.0	22.0	17.0		
					45	500	28.0	25.0	18.5		
					75	740	28.0	25.0	18.5		
					112.5	930	38.0	29.0	23.0		
					150	1,210	42.0	33.0	26.0		
					225	1,500	46.0	35.0	30.0		
					300	2,125	52.0	35.0	30.0		
					500	3,090	60.0	48.0	33.0		
					750	4,800	66.0	56.0	39.0		
					1000	5,500	71.0	64.0	44.0	UUT-5, NEMA 3R Aluminum	

Notes:

- 1) Qualification level may increase for mounting locations within structure with z/h<1.0.
- 2) Qualified units can be constructed of aluminum or copper windings

TABLE 2 - Test Unit Summary						
Test Unit	Natural Frequencies (Hz)			Level Qualified		
	F-B	S-S	V	Sos	z/h	Fp/Wp
UUT-1	15.6	20.8	N/A	2.0	1	1.44
UUT-2	32.5	N/A	28.3			
UUT-3	N/A	N/A	28.3			
UUT-4	15.6	20.8	25.1			
UUT-5	7.7	6.2	32.9	1.6		1.15

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